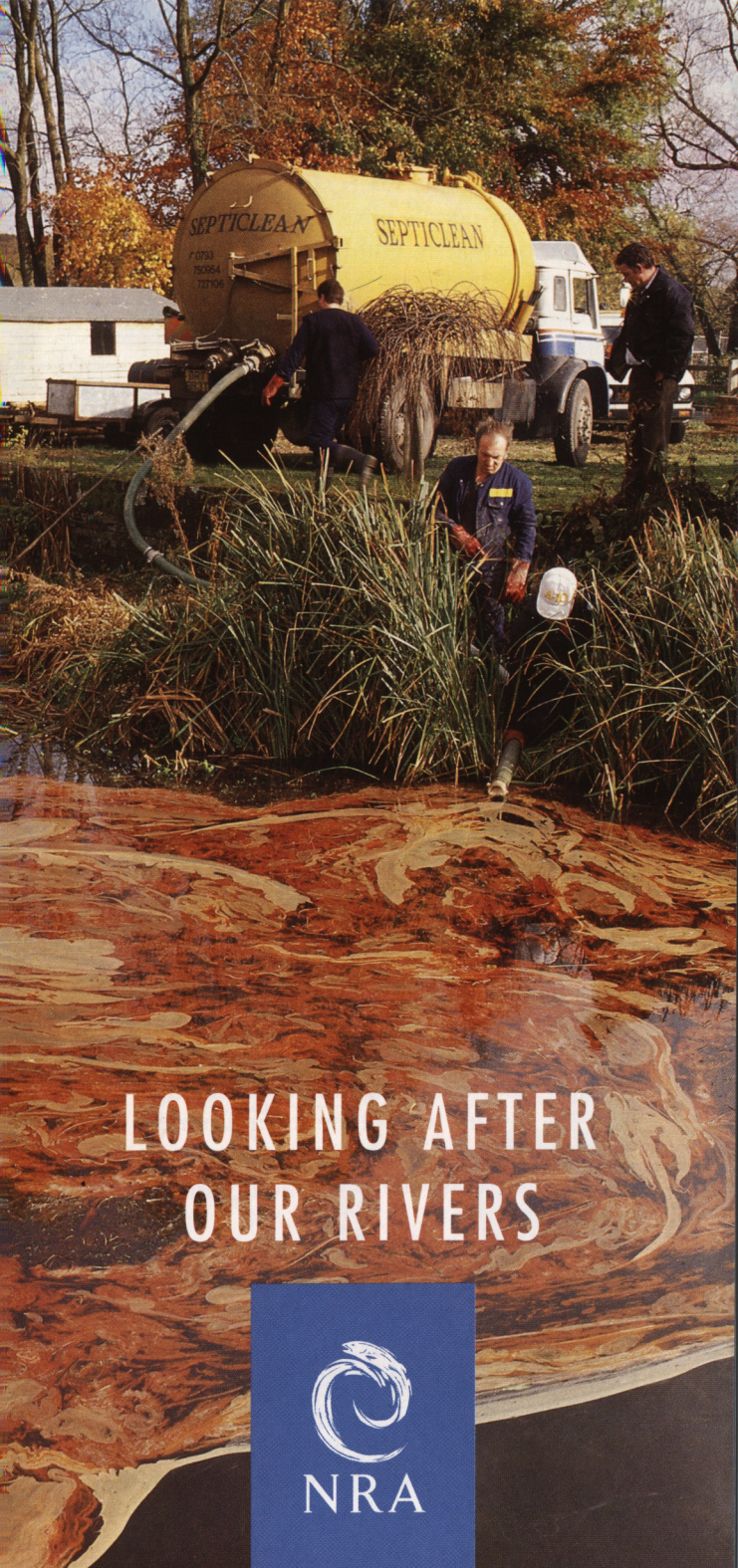


LOOKING AFTER OUR RIVERS

NRA

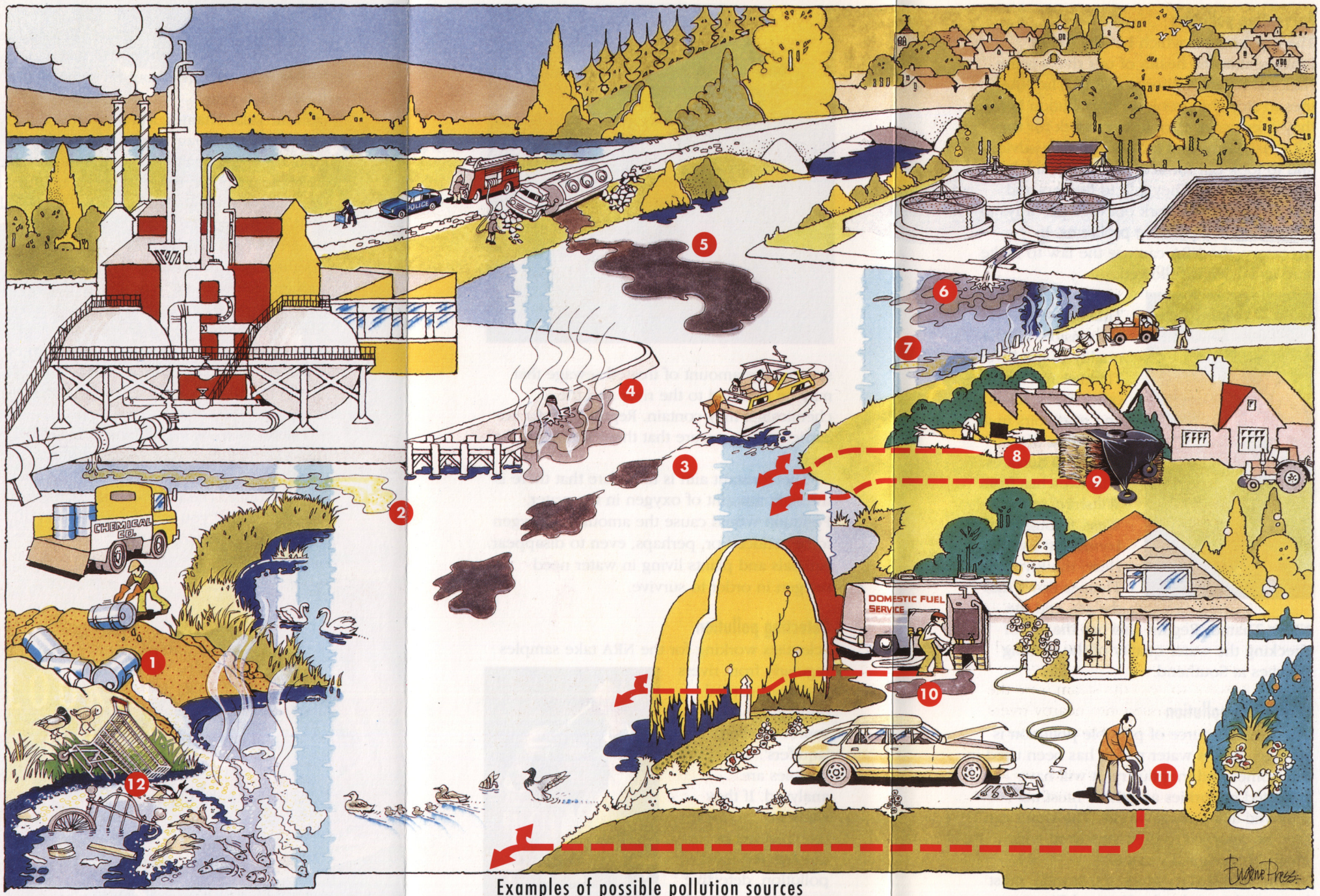
The River Thames provides much of the water used by some 11 million people living in the counties through which it flows. The Thames, and other rivers, also provide much pleasure for people who enjoy pastimes like fishing, boating and birdwatching. Rivers and streams are important, too, in providing homes for all kinds of wildlife. We, therefore, care that our rivers are kept as clean as possible.

The pollution problem

What is it that can make our rivers dirty and unhealthy? We say that rivers like this are 'polluted'. This means that they are carrying impurities which make the water harmful to humans, animals or plants. Pollution is generally caused by human activity.

Pollution occurs in many ways. Some possible sources of pollution are shown in the picture opposite. Sometimes the causes of pollution are less obvious - and more difficult to control. Water from farmland, containing traces of fertilizer and pesticides, may be washed into rivers. Another example is where rivers become so acid that fish can no longer live in them. This is caused by 'acid rain' - rain which has been affected by certain chemicals in the atmosphere, produced by power stations and cars and lorries. Also, water used in power station cooling towers, to cool the steam from the turbines, may be passed into nearby rivers. This will increase the temperature of the river water.

Some naturally occurring events are also seen as causing pollution. For example, some rivers carry large amounts of mineral particles, called 'silt'. The silt is washed into the river from the land after heavy rainfall. It turns the river water brown. In the autumn, large quantities of dead leaves and other organic matter find their way into rivers and streams.

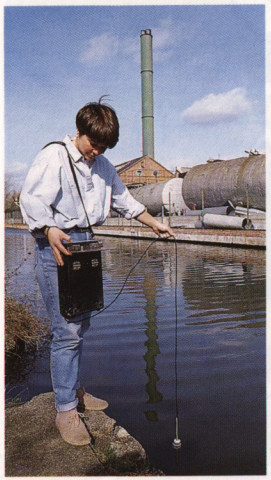


Examples of possible pollution sources

1 Illegal dumping of harmful chemicals. **2** Leakage of chemicals from industrial premises. **3** Illegal oil discharges from launches and ships. **4** Trade effluent discharges containing toxic waste. **5** Oil spillages from road tankers. **6** Poor quality sewage works effluent. **7** Chemical spillages on the highway. **8** Liquid farmyard waste. **9** Liquor from farmyard silage stores. **10** Heating oil spillages and leaks from storage tanks. **11** Illegal disposal of car engine oil into drains. **12** Shopping trollies and household debris.

Preventing pollution

The organisation which has the job of looking after the health of our rivers is the National Rivers Authority (NRA). The NRA tries to stop the problems of pollution before they ever occur. People who work for the NRA visit farms and factories to give advice and to look out for activities which might cause pollution. They talk to farmers and factory owners to work out together ways of preventing any possible problems. If necessary, the NRA can use the law to make sure its advice is followed.



The Authority's Thames Region is responsible for the quality of the River Thames and many other rivers, lakes and reservoirs in a huge area of 1,290,000 hectares. This stretches from Wiltshire, in the West, through London to Essex. Here, the River Thames flows into the sea and the NRA's Thames Region also has the job of checking the water quality of the bathing beaches at Southend.

Controlling pollution

The biggest source of possible pollution is sewage. This is water which has been used in our homes and in industry. It will have collected impurities and these must be removed at a sewage works. The water can then be returned to the rivers from which much of it originally came.

The standard to which the sewage must be treated is set by the National Rivers Authority. The standard is described in a legal document known as a 'consent'. The consent

sets out the amount of treated sewage that may be returned to the river and the chemicals it may contain. Regular checks are carried out to ensure that these standards are met.

The constant aim is to ensure that there is the right amount of oxygen in the water. Pollution would cause the amount of oxygen to be reduced or, perhaps, even to disappear. Animals and plants living in water need oxygen in order to survive.

Detecting pollution

Scientists working for the NRA take samples regularly from rivers and from natural underground sources, called 'aquifers'. The samples are analysed. If they show an unexplained or unexpected level of pollution, detective work is immediately begun to find out where the pollution has come from.

At Fobney, in Reading, Thames Region has its main chemistry laboratory. Here, a wide range of tests are carried out on some 30,000 samples each year.

On the tidal Thames, a survey boat called the 'Thames Guardian' carries out regular checks on water quality. Scientists carry out tests while on board the boat and a careful check is kept on any changes in the chemical and biological quality of the river. From the boat, a trawl net can be dragged along the bed of the river to bring up fish and other organisms. From these 'trawls' a great deal can be learned about conditions in the river.

The NRA would be unable to control pollution so successfully without the help of the public, the police and the fire service. They all play their part in reporting cases of pollution.

You, too, can be a pollution detective. If you notice pollution of a river, telephone the Communications Centre of the NRA Thames Region at once. The number is (Freephone) 0800-252768 and you will get an answer at any time of the day or night.

NRA

National Rivers Authority

Thames Region

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